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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/975,619      | 10/11/2001  | Takayuki Mito        | MITO ET AL-2        | 8375             |

25889            7590            09/19/2002

WILLIAM COLLARD  
COLLARD & ROE, P.C.  
1077 NORTHERN BOULEVARD  
ROSLYN, NY 11576

[REDACTED] EXAMINER

BOLDEN, ELIZABETH A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 1755     | 5            |

DATE MAILED: 09/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/975,619             | MITO ET AL.         |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Elizabeth A. Bolden    | 1755                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 18 April 2002.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-4 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-4 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                 | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2 &amp; 4</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishioka et al. Japanese Patent Publication 11-162361.

A machine-generated translation of Nishioka et al. accompanies this action. In reciting this rejection, the examiner will cite this translation.

Nishioka et al. teach a composition used to form the partitioning walls i.e. barrier ribs or septum, of a plasma display panel where 1-40 weight parts are an inorganic filler and 100 weight parts of a glass. See abstract of Nishioka et al. Nishioka et al. further teach the inorganic filler comprises two or more kinds of SiO<sub>2</sub> including fused silica, alpha-quartz, and cristobalite, a component to whiten the septum such as TiO<sub>2</sub>, and other mineral constituents such as Al<sub>2</sub>O<sub>3</sub>. See paragraphs 29-31.

The reference differs from the claims by not specifically stating the amount of other mineral constituents based on 100 weight parts of the glass.

Example 29 shows that the inorganic filler contains 12 weight parts fused silica, 21 weight parts alpha-quartz, and Al<sub>2</sub>O<sub>3</sub>. See Table 1 of Nishioka et al. If the amount of Al<sub>2</sub>O<sub>3</sub> is at least 3.75 weight parts then the total weight parts of inorganic filler is 36.75 weight parts based

Art Unit: 1755

on 100 weight parts glass. The inorganic filler would have a composition of 32.7 weight percent fused silica, 57.1 weight percent alpha-quartz, and 10.2 weight percent  $\text{Al}_2\text{O}_3$ .

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a filler material for a barrier rib material containing  $\text{TiO}_2$  and  $\text{Al}_2\text{O}_3$  of Nishioka et al. because the resultant filler material would have the thermal properties of  $\text{TiO}_2$  and  $\text{Al}_2\text{O}_3$  and the dielectric properties of the fused silica and alpha-quartz.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi et al., European Patent Application EP 855,731 A1, in view of Hayakawa et al. Japanese Patent 2000-164,142, in further view of Burn, U.S. Patent 4,879,261.

A machine-generated translation of Hayakawa et al. accompanies this action. In reciting this rejection, the examiner will cite this translation.

Horiuchi et al. teach a composition for barrier ribs comprising a glass powder and an organic component. See page 6, lines 3-4. Horiuchi et al. further teach that the barrier rib composition comprising 3-60 wt% of a filler. See page 8, lines 15-17. A preferable filler is a high melting point glass powder containing 15 wt% or more of ceramic powders such as titania, alumina, barium titanate, or zirconia, or silicon oxide or aluminum oxide. See page 8, lines 18-20.

Horiuchi et al. differs from the claims by not teaching the specific composition of the silica powder.

Hayakawa et al. teach that an insulating material comprising 60-90 wt% glass and 10-40 wt% two or more kinds of the filler to be selected from rutile ( $\text{TiO}_2$ ), anatase ( $\text{TiO}_2$ ), corundum,

Art Unit: 1755

quartz, cristobalite, or amorphous silica. See abstract of Hayakawa et al. Hayakawa teach an example filler which consists of cristobalite, anatase, rutile, corundum, quartz, and a-silica. See paragraph 33. Example 5 in Table 1 teaches a filler consisting of  $\text{Al}_2\text{O}_3$ ,  $\text{TiO}_2$ , and  $\text{SiO}_2$ .

While Hayakawa et al. teach the use of quartz, cristobalite, and amorphous silica or a mixture thereof as a component of the filler. The reference does not specifically teach a combined silica powder.

Burn teaches a dielectric composition comprising of 70-85 wt% silica and 15-30 wt% zinc borate. See abstract of Burn. Burn teaches that the silica source can be amorphous and/or crystalline; wherein any of the six crystalline states maybe utilized preferably alpha-quartz. See Column 3, lines 22-24. Burn further teaches adjusting the proportion of amorphous and crystalline silica to meet the thermal expansion coefficient and the dielectric property values. See column 3, lines 34-40. Table 1 shows examples of quartz and non-crystalline silica batched with the fluxing agent zinc borate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a barrier rib composition comprising a filler comprising a silica powder of Horiuchi et al. as suggested by Hayakawa et al. and Burn because the resultant barrier rib would have the forming and melting properties of Hayakawa et al. and the low thermal expansion coefficient, dielectric and refractive index values of Burn. See paragraphs 23 and 33 and Table 1 of Hayakawa et al.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi et al., European Patent Application EP 855,731 A1, in view of Ogihara et al., U.S. Patent 4,764,233.

Horiuchi et al. teach a composition for barrier ribs comprising a glass powder and an organic component. See page 6, lines 3-4. Horiuchi et al. further teach that the barrier rib composition comprising 3-60 wt% of a filler. See page 8, lines 15-17. A preferable filler is a high melting point glass powder containing 15 wt% or more of ceramic powders such as titania, alumina, barium titanate, or zirconia, or silicon oxide or aluminum oxide. See page 8, lines 18-20.

Horiuchi et al. differs from the claims by not teaching the specific composition of the silica powder in the filler powder.

Ogihara et al. teach a dielectric compositions comprising a low softening point glass and at least two kinds of silica. See column 2, lines 51-60 and column 3, lines 1-9.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a barrier rib composition of Horiuchi et al. as suggested by Ogihara et al. because the resultant barrier rib with the filler powder comprising a multitude of silica powders would have the forming and melting properties of Horiuchi et al. and the low thermal expansion coefficient, dielectric and refractive index values of Ogihara et al. See column 3, lines 10-20.

### ***Conclusion***

The additional references cited on the 892 have been cited as art of interest since they are cumulative to or less than the art relied upon in the rejections above.

Art Unit: 1755

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Bolden whose telephone number is 703-305-0124. The examiner can normally be reached on 8:30am to 6:00 pm with alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on 703-308-3823. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



DAVID SAMPLE  
PRIMARY EXAMINER

EAB  
September 16, 2002